DR Availability Window

Problem Statement Background

March update

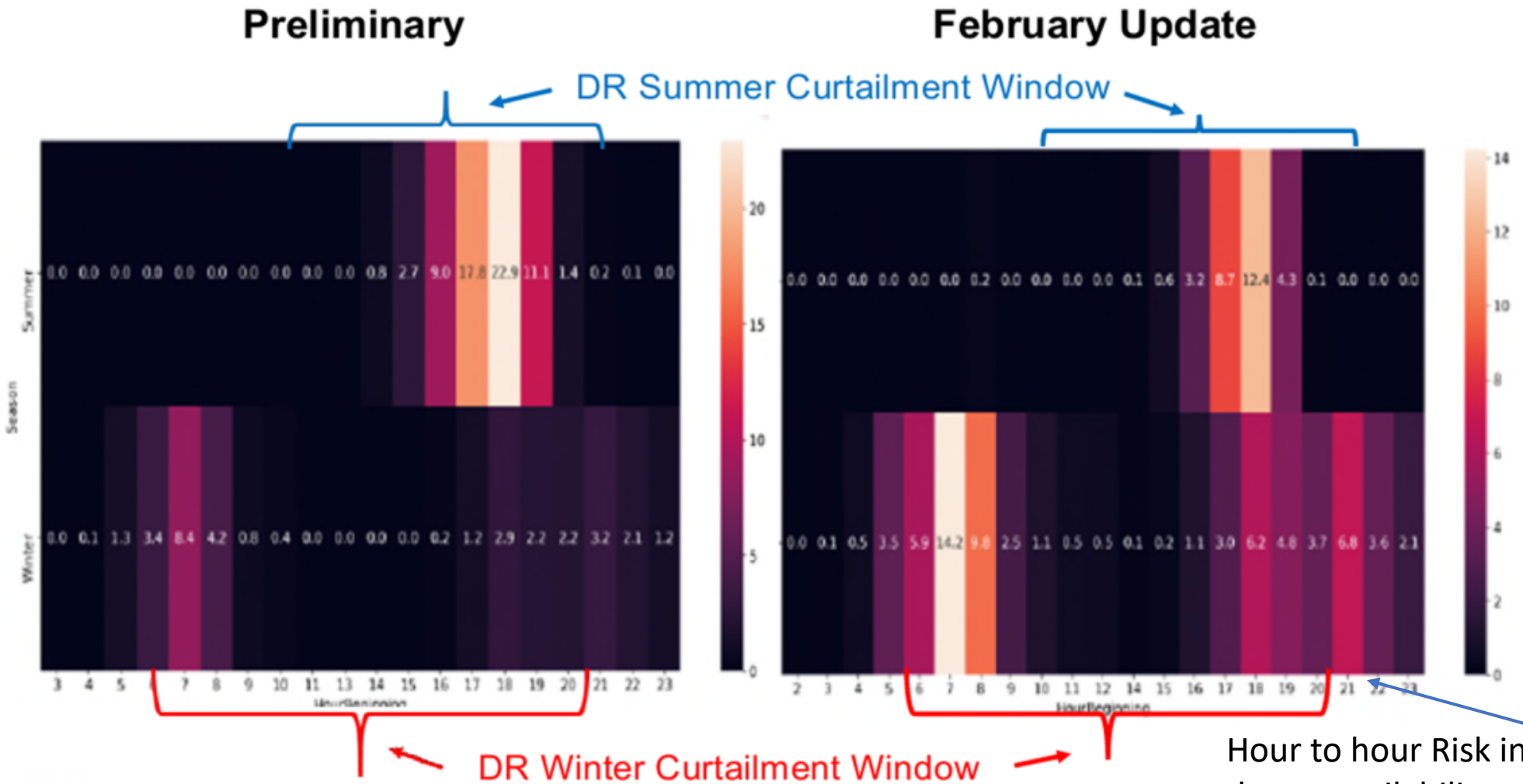
Sponsors

- Advanced Energy Management Alliance
  - Most members are PJM members
- PJM Industrial Customer Coalition
- CPower
- Enel
- NRG Curtailment Solutions, LLC

Problem

- The current DR availability window is a legacy administrative convenience that has now become a barrier to full participation of DR in capacity markets with recognition of expanding winter reliability risks in frequency and time of day.
- DR is the only RPM resource for which the ELCC is impacted by restrictions on PJM's authorization to dispatch rather than by resource capability.
- In effect, the tariff creates a reliability risk via the availability window. The issue should be addressed in a fast-track approach.

Hours of Risk vs. DR Curtailment Window



Problem Source

- The definition of Annual DR from the RAA is based on an outdated understanding of seasonal and time of day reliability risk.

Definition:

> "Annual Demand Resource" shall mean a resource that is placed under the direction of the Office of the Interconnection during the Delivery Year, and will be available for an unlimited number of interruptions during such Delivery Year by the Office of the Interconnection, and will be capable of maintaining each such interruption between the hours of 10:00AM to 10:00PM Eastern Prevailing Time for the months of June through October and the following May, and 6:00AM through 9:00PM Eastern Prevailing Time for the months of November through April unless there is an Office of the Interconnection approved maintenance outage during October through April. The Annual Demand Resource must be available in the corresponding Delivery year to be offered for sale or Self-Supplied in an RPM Auction, or included as an Annual Demand Resource in an FRR Capacity Plan for the corresponding Delivery Year.

Problem Source

PJM's evolving assessment of reliability risk has identified risk in winter hours that are not included in the reliability window.

- For example, analysis of 24-25 DY indicates that there is some winter risk between 9pm and 11pm in winter.

PJM's Explanation of the Status Quo

From ER11-2288 – PJM's initial filing:

> The first of the two new products, Annual DR, must be available on any day of the year and for an unlimited number of interruptions during the year. This product still has limits on the hours of the day when it must be available—10:00 a.m. to 10:00 p.m. EPT for May through October and *6:00 a.m. to 9:00 p.m. EPT for November through April— but these are more than adequate to capture any time that these resources reasonably might be needed*. [emphasis added]

The above no longer appears to be valid.

Compliance

The Status quo is not compliant with Order 719 which prohibits unreasonable barriers to entry for Demand Resources.

Commissioner Clements notes in her dissent of the ER24-99 ruling:

> “To the extent that [PJM’s failure to address the availability window] denies demand response resources an opportunity to deliver a service that they stand ready, willing, and able to provide, this does appear to render the existing tariff unjust and unreasonable and unduly discriminatory.”

Process

KWA 2

- DR Coalition is proposing to “fast track” a change in availability hours to align with PJM’s current understanding of hourly risk and remove a source of reliability risk that originates in the tariff.
- It is proposed that this be done at MRC.

KWA 3

- DR Coalition is proposing to address the addition of a DR product without an availability window at MIC. We are open to other forums for this.

Timeline

DR Coalition seeks an implementation of KWA 2 for the 25-26 DY.

- Implementation for the 25-26 BRA Planning parameters is not achievable but a change that applies to IA3 and DY is achievable
- Even if the change is not applicable for BRA, we believe it's important to give market participants the information as soon as possible; our quick fix process would ensure resolution ahead of the BRA
- FERC approval prior to BRA is possible with expedited stakeholder approval, especially with a request for 30 day approval at FERC (see next slide)

Potential Fast Track timeline (KWA2)

- Feb MRC – 1st read
- Mar MRC – approval of PS/IC. Added education, final availability hours.
- March MC – 1st read
- April MRC, April MC –Vote on fast track solution.
- April 30 – File at FERC
- May 30 – 30 day expedited FERC approval
- June 30 – 60 day normal FERC approval
- July 17 – 25-26 BRA

Stakeholder concerns

Changing the availability window does not change Reliability Risk related to DR performance.

- Some have argued that DR energy reductions from load less than PLC increase risk. This is not the case.
- Under EUE processes, PJM determines a non-curtailable load (forecast load minus estimated DR energy reductions) that must be met by generators.
  - Non-curtailable load is established by subtracting the estimated DR energy reduction from the forecast load.
- Once non-curtailable load estimates are determined, the actual DR load and energy reduction at the time of dispatch is immaterial to risk.
  - Generators must serve the non-curtailed load regardless of the DR starting point.

DR Risk

- Comment – to the extent that there is reliability risk associated with the energy reduction that is available from DR it is derived from the accuracy of PJM's forecast of this reduction and not from the available reduction.
  - If DR loads are biased by forecast to be higher than actual DR loads, non-curtailable load will be forecast too low and not enough generation will be planned.
  - If DR loads are biased by forecast to be lower than actual DR loads, non-curtailable load will be forecast too high, lower risk but higher costs due to excess generation procurement.
  - An unbiased but reasonably accurate DR load forecast would result in a near zero reliability risk component from DR loads at less than PLC.
- For these reasons, expansion of the availability window can be considered on a fast track separately from forecast risk.

Example Part 1

Scenario 1 - Assume

- 100,000 MW hourly load forecast
- 5000 MW of DR Capacity(PLC minus FSL)
- DR Capacity is self scheduled to 1000 MW less than PLC and provide 4000 MW of incremental energy reduction when dispatched.

Result

- Non-curtailable load is 96,000MW (100,000 – 4,000)
- Generation must serve 96,000MW load

Example Part 2

Scenario 2 - Assume

- 96,000 MW hourly load forecast
- 5000 MW of DR Capacity (PLC minus FSL)
- DR Capacity is self-scheduled to FSL and would have an incremental energy reduction of 0MW if dispatched.

Result

- Non-curtailable load is 96,000MW
- Generation must serve 96,000MW load

Example Summary

- Scenario 1 and 2 each have 96,000MW of non-curtailable load that must be served by generation.
- After dispatch DR has met its commitment to reduce to FSL.
- DR participant's energy drop on dispatch does not change the reliability risk
- All of the reliability risk to serve non-curtailable load in winter is derived from generator unavailability.

Conclusion – changing the DR availability window cannot impact the reliability risk related to energy reduction.

Questions

Contacts

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